

WE CLAIM:

1. A cooling system, comprising:

5 a plenum formed of a thermally conductive material and having a base including a plurality of passageways adapted to pass air therethrough, the passageways being defined by a plurality of fins extending outwardly from the base;

10 the plenum further comprising a receptacle adapted to receive a heat generating component, the receptacle also extending from the base at a location proximate, but remote from, the fins, the receptacle being adapted to thermally transfer heat from the received heat generating component to the fins; and

a fan adapted to create air flow across the base and through the passageways.

15 2. The cooling system as specified in Claim 1 wherein the base has an upper surface and a lower surface, wherein the fins extend outwardly from the upper surface and the receptacle extends outwardly from the lower surface.

3. The cooling system as specified in Claim 1 wherein the base, the fins, and the receptacle are formed as a unitary member.

20 4. The cooling system as specified in Claim 1 wherein the base is comprised of a pair of electrically conductive portions separated from each other, and joined by, an electrically non-conductive portion, further comprising a pair of said receptacles, each said receptacle being coupled to a respective said portion.

5. The cooling system as specified in Claim 1 wherein the base is comprised of a first electrically conductive portion and a second electrically non-conductive portion, further comprising a pair of said receptacles, each said receptacle being coupled to a respective said portion.
- 5 6. The cooling system as specified in Claim 1 wherein the fins are formed generally parallel to one another to define the plurality of passageways.
7. The cooling system as specified in Claim 1 further comprising a lid member coupled to the plenum to define the passageways, whereby the fins separate one passageway from another passageway.
- 10 8. The cooling system as specified in Claim 1 wherein the plenum has an intake port and an exhaust port, wherein the passageways communicate from the intake port to the exhaust port.
9. The cooling system as specified in Claim 8 wherein the passageways funnel from the intake port to the output port.
- 15 10. The cooling system as specified in Claim 9 wherein the exhaust port faces the intake port.
11. The cooling system as specified in Claim 9 wherein the exhaust port opens laterally from the base.
12. The cooling system as specified in Claim 1 wherein the fins are formed as a plurality of generally collinear fins in a plurality of rows.
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13. The cooling system as specified in Claim 12 wherein the base further includes a plurality of openings extending therethrough and communicating with the passageways, the openings being adapted to generate a venturi effect when air is communicated through the passageways.
- 5 14. The cooling system as specified in Claim 1 wherein the fan is disposed proximate the exhaust port and draws air into the passageways via the intake port.
15. The cooling system as specified in Claim 1 wherein the plenum receptacle is adapted to receive the heat generating component in a friction fit arrangement.
16. The cooling system as specified in Claim 15 wherein the receptacle
10 extends away from the fins.
17. The cooling system as specified in Claim 16 wherein the receptacle is opposed from the fins.

18. In combination;

A cooling system, comprising:

a plenum formed of a thermally conductive material and having a base including a plurality of passageways adapted to pass air therethrough, the
5 passageways being defined by a plurality of fins extending outwardly from the base;

the plenum further comprising at least one receptacle adapted to receive a heat generating component, the receptacle also extending from the base at a location proximate, but remote from, the fins, the receptacle being adapted to
10 thermally transfer heat to the fins;

a fan adapted to create air flow across the base and through the passageways; and

a heat generating component disposed in, and thermally coupled to, the receptacle so as to thermally transfer heat generated by the heat generating
15 component to the fins.

19. The cooling system as specified in Claim 18 further comprising a housing enclosing a plurality of components, wherein the base further includes a plurality of openings communicating the passageways to the enclosed components, whereby the fan creates a venturi effect proximate the openings to thermally draft
20 heat from the enclosed components to the passageways.

20. The cooling system as specified in Claim 18 wherein the base has an upper surface and a lower surface, wherein the fins extend from the upper surface and the receptacle extends from the lower surface.

21. The cooling system as specified in Claim 18 wherein the base, the fins, and the receptacle are formed as a unitary member.
22. The cooling system as specified in Claim 18 wherein the base is comprised of a pair of electrically conductive portions separated from each other, and joined by, an electrically non-conductive portion, further comprising a pair of said receptacles, each said receptacle being coupled to a respective said portion.
23. The cooling system as specified in Claim 18 wherein the base is comprised of a first electrically conductive portion and a second electrically non-conductive portion, further comprising a pair of said receptacles, each said receptacle being coupled to a respective said portion.
24. The cooling system as specified in Claim 18 wherein the fins are formed generally parallel to one another and define the plurality of passageways.
25. The cooling system as specified in Claim 18 further comprising a lid member coupled to the plenum to define the passageways, whereby the fins separate one passageway from another passageway.
26. The cooling system as specified in Claim 19 wherein the plenum has an intake port and an exhaust port, wherein the passageways communicate from the intake port to the exhaust port.
27. The cooling system as specified in Claim 26 wherein the passageways funnel from the intake port to the output port.
28. The cooling system as specified in Claim 27 wherein the exhaust port faces the intake port.

29. The cooling system as specified in Claim 27 wherein the exhaust port opens downwardly from the base.
30. The cooling system as specified in Claim 19 wherein the fins are formed as a plurality of generally collinear fins disposed in a plurality of fin rows.
- 5 31. The cooling system as specified in Claim 19 wherein the base member further includes a plurality of openings extending therethrough and communicating with the passageways, the passageways being adapted to generate a venturi effect when air is communicated through the passageways.
32. The cooling system as specified in Claim 18 wherein the fan is disposed
10 proximate the exhaust fan and draws air into the passageways via the intake port.
33. The cooling system as specified in Claim 18 wherein the plenum receptacle receives the heat generating component in a friction fit arrangement.
34. The cooling system as specified in Claim 18 wherein the receptacle extends away from the fins.
- 15 35. The cooling system as specified in Claim 18 wherein the receptacle is opposed from the fins.
36. The cooling system as specified in Claim 18 wherein the heat generating component is an electrical component.
37. The cooling system as specified in Claim 18 wherein the heat generating
20 component is a resistor.
38. The cooling system as specified in Claim 18 wherein the heat generating component is transistor.

39. The cooling system as specified in Claim 18 wherein the heat generating component is an integrated circuit.